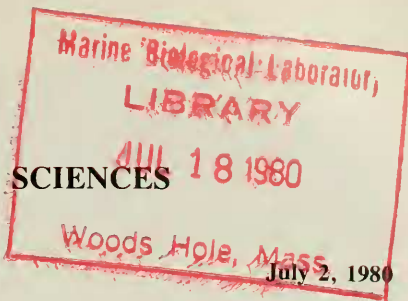


PROCEEDINGS  
OF THE  
CALIFORNIA ACADEMY OF SCIENCES



Vol. 42, No. 8, pp. 287-293, 5 figs.

*XENAPLOACTIS*, A NEW GENUS FOR *PROSOPODASYS ASPERRIMUS*  
GÜNTHER (PISCES: APLOACTINIDAE), WITH  
DESCRIPTIONS OF TWO NEW SPECIES

By

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**ABSTRACT.** A new genus, *Xenaploactis*, is created for *Prosopodasys asperrimus* Günther, 1860, which is re-described. *X. anopta* from Luzon Island in the Philippines and *X. cautes* from the Andaman Sea and the Gulf of Thailand are described as new. These species exhibit differences in the configuration of ridges between the eyes, body depth, head pores, and other features. Species of *Xenaploactis* differ from those of other genera of the Aploactinidae by the presence of several features in combination: 3 anterior dorsal fin spines forming a separate fin, rather sharp head spines, a markedly upturned mouth, and a body densely covered with modified pointed scales.

INTRODUCTION

Günther (1860) described *Prosopodasys asperrimus*, assigning it to a genus otherwise composed of tetrarogid scorpaenoids. Because of this and because the species remains known from only the holotype, *Prosopodasys asperrimus* has not been generally recognized as an aploactinid scorpaenoid.

Günther described the head and body as "covered with small prickles," and this caused Poss and Eschmeyer (1978) to suspect that this species was an aploactinid. Other features mentioned in Günther's brief description—absence of palatine teeth, presence of one spine and three soft rays in the pelvic fins, and presence of flexible anal spines—tended to support this

view. More recent examination of the holotype confirms this suspicion.

Species assigned to *Prosopodasys*, a name originally proposed by Cantor (1849:1026) as a replacement name for *Apistus* Cuvier and Valenciennes, have been placed into a number of genera. *Prosopodasys asperrimus* does not belong in any of these nor does it belong in any existing genus of aploactinid.

Two undescribed and closely related species have been discovered among specimens in the collections of the National Museum of Natural History (USNM) and the California Academy of Sciences (CAS). Together with *Prosopodasys asperrimus*, they form a natural cluster quite distinct from other aploactinids. Provided below

are descriptions of these species and a new genus to contain them.

#### METHODS

The methods used in this study follow those of Eschmeyer (1969) as modified by Poss and Eschmeyer (1978). Spines and rays are difficult to distinguish and median fin-ray counts were checked against radiographs. The last fin ray in the dorsal and anal fins is double, borne on a single pterygiophore, and counted as one ray.

#### *Xenaploactis* new genus

TYPE-SPECIES.—*Prosopodasy asperimus* Günther, 1860.

DIAGNOSIS.—Aploactinid fishes with spinous dorsal fin in 2 parts; the first 3 dorsal fin spines inserting on cranium and forming a separate fin, widely separate from the 4th spine of the second part of the spinous dorsal fin; rather pungent head spines, including 2 prominent preorbital spines and strong spine on lateral face of third infraorbital bone; head and body densely covered with modified scales; mouth strongly upturned. Maxillary with prominent angular point at end of anteroventral margin, with ridge on lateral face. Dorsal III, X, 8–9 (last double) or III, XI, 8–9 (last double). Anal I, 9–10 (last double). Pelvic I, 3. Pectoral 13–14. Vertebrae 27–28. Branchiostegal rays 6. Four dorsal spines and associated pterygiophores anterior to third neural spine. Upper posterior margin of opercular bone very close to base of dorsal fin. Teeth on jaws and vomer, none on palatines.

DESCRIPTION.—(See also species descriptions below.) Dorsal fin in 2 parts, originating on cranium above posterior border of eye; first 3 spines close together, widely separate from 4th spine, which originates just anterior to end of head; 2nd spine longest, all spines rather weak, flexible, without cirri. Dorsal fin membrane of second part of fin notably incised, dorsal spines free from fin membrane at about midlength; degree of fin incision decreases posteriorly. Pectoral fin rays all unbranched, longest 5–7 from above, reaching just past anus.

Head covered with modified scales, scales absent in interorbit and behind eye. Mouth strongly upturned. Movable lachrymal bone (infraorbital 1) bladeliike, with 3 spines; 1st small, directed anteriorly, followed by 2 prominent sharp spines, 2nd spine about equal in length to 3rd, directed downward; 3rd spine directed

down and slightly back. Third infraorbital with prominent spine on ventral margin of bone projecting ventrally and laterally; lateral face of bone with prominent ridge and 2 blunt spines. Infraorbital (suborbital) stay appearing as a strong ridged bar. One postorbital bone (infraorbital 4 or 5). Interorbit with prominent ridges. Nasal bones tubed, without spines. Preopercle with 5 rather strong spines, uppermost largest, diminishing in size ventrally. Upper arm of preopercle forming strong ridge. Opercle with 2 weak ridges, lower ending in small blunt spine on opercular margin. Opercular flap extending nearly to base of dorsal fin between spines 4 and 5. Interopercle forming spinous projection on posterior opercular margin. Posterior dorsal border of cleithrum ending in small, poorly defined blunt spine. Angular bone prominent, strongly jutting ventrally with mouth closed. Maxillae reaching anterior border of eye, with ridged dorsal border, ridge near ventral border. Maxillary cirrus minute.

Pelvic fin origin slightly in advance of lowermost pectoral fin rays. Pelvic fin membrane not adnate to body. Caudal fin rounded, with 18 total fin-ray elements (9 upper and 9 lower), all unbranched. Caudal skeleton with parahypural, 1st and 2nd hypurals fused; 3rd and 4th hypurals fused; 5th hypural small, autogenous; 1st preural neural spine long; 2 epurals. Seven upper and 7 lower fin-ray elements are attached to the hypurals, 2 (procurrent) rays are free above and below.

ETYMOLOGY.—The generic name *Xenaploactis* is derived from the Greek *xenos* (stranger) + *Aploactis* (a related genus). *Xenaploactis* is feminine.

#### Key to the Species of *Xenaploactis*

- 1a. Interorbit with ridges nearly parallel (Fig. 4). Body depth less than  $\frac{1}{3}$  of standard length. Dorsal fin III, IX, 8–9 (based on limited material; some variation to be expected) ..... *X. cautes* (Figs. 4 lower and 5)
- 1b. Interorbit with ridges divergent anteriorly, convergent over middle of orbit, divergent posteriorly (Figs. 2 and 4 upper). Body depth equal to or greater than  $\frac{1}{3}$  of standard length. Dorsal fin III, X, 8–9 (based on limited material; some variation to be expected) .....
- 2a. Second infraorbital bone with 1 or 2



FIGURE 1. Lateral view of holotype of *Prosopodasys asperrimus* (= *Xenaploactis asperrima*) (BMNH 1979.5.5:1, 39.9 mm SL). Specimen formerly dried, somewhat distorted.

spines. Pore of infraorbital lateral line canal at second infraorbital bone as simple obscure pore. Body depth greater than  $\frac{1}{3}$  of standard length. No fingerlike cirri above uppermost preopercular lateral line pores. Dorsal fin III, X, 9. Anal I, 10 (based on limited material; some variation to be expected) .....

..... *X. asperrima* (Figs. 1 and 2)

2b. Second infraorbital bone without spines. Pore of infraorbital lateral line canal at second infraorbital bone as prominent elongate slit. Body depth equal to  $\frac{1}{3}$  of standard length. Fingerlike cirri present above uppermost preopercular lateral line pores. Dorsal III, X, 8. Anal I, 9 (based on limited material; some variation to be expected) .....

..... *X. anopta* (Figs. 3 and 4 upper)

### *Xenaploactis asperrima* (Günther)

(Figures 1 and 2)

*Prosopodasys asperrimus* GÜNTHER, 1860:140–141 (original description; type-locality East Indies).

**MATERIAL.**—**Holotype:** BMNH 1979.5.5:1 (39.9 mm SL). East Indies, Sir E. Belcher, no other data.

**COUNTS.**—Dorsal fin III, X, 9 (last double). Anal fin I, 10 (last double). Pectoral fin 13 (left), 14 (right). Pelvic fin 1, 3. Lateral line scales 10 (left), 11 (right). Vertebrae 27.

**DESCRIPTION.**—(See also generic diagnosis above.) Body notably elevated behind head,

body depth more than  $\frac{1}{3}$  of standard length. Body densely covered with modified scales which form spinous points, best developed on upper back behind head. Lateral line with 10–11 tubed scales, each with 2 small laterally projecting spinules, best developed anteriorly, last scale extending over base of caudal fin. Gill rakers short, difficult to count, total 8–10; 3 on upper arch, 5–7 on lower arch. No modified scales on snout. Lachrymal bone (infraorbital 1) with 2 large spines, first notably curved. A small spine in front at base of first spine, a small spine at base of second spine. Second infraorbital bone with a small double or single spine, with obscure small circular lateral line pore. Third infraorbital bone with a large spine directed out and down; a strong ridge attached to preopercle. Mouth very strongly upturned, nearly vertical. Interorbit with prominent ridges, divergent anteriorly, convergent over middle of interorbit, divergent posteriorly (Fig. 2). Postocular spine appearing as a sculptured ridge, weakly connected to supraorbital ridge. Parietal spine lumplike. Pterotic spine as a strong, slightly curved ridge. Posttemporal spine well ossified, sculptured, appearing as a ridged lump, followed by small bladlike supracleithral spine. Dorsal posterior border of cleithrum appearing as a marked ridge, ending in a blunt, poorly defined spine. Preopercular lateral line pores simple, no fingerlike cirri above uppermost pores. Ventral surface of dentary without distinct cirri.

Color in life unknown. Color of head and body





FIGURE 2. Dorsal view of head of holotype of *Prosopodasys asperrimus* (= *Xenaploactis asperrima*).

in preservative light brown, fins slightly darker and possibly speckled in life.

Measurements in millimeters as follows (percent standard length in parentheses): standard length 39.9; head 13.2 (34); snout 3.5 (9); orbit 3.0 (7); interorbital width 2.2 (5); jaw 6.0 (15); postorbit 7.0 (17); body depth 14.6 (37); predorsal 6.2 (15); anal fin 14.0 (35); caudal fin 9.5 (24); pectoral fin 9.2 (23); pelvic fin 4.5 (11); 1st dorsal spine 3.2 (8); 2nd dorsal spine 4.1 (10); 3rd dorsal spine 3.1 (8); 4th dorsal spine 1.8 (4); 5th dorsal

spine 2.7 (7); penultimate dorsal spine 3.1 (8); last dorsal spine 3.5 (9); anal spine 2.1 (5); least depth of caudal peduncle 4.2 (10); snout to base of 2nd dorsal spine 7.2 (18); snout to base of 3rd dorsal spine 7.8 (19); snout to base of 4th dorsal spine 11.5 (29); snout to base of 5th dorsal spine 14.6 (37); width of 1st dorsal spine at midlength 0.2 (1); incision of dorsal fin membrane at 4th dorsal spine (from tip to membrane) 1.8 (4).

DISTRIBUTION.—Known only from the holotype from the "East Indies."

### *Xenaploactis anopta*, new species

(Figures 3 and 4 upper)

No literature applies to this species.

MATERIAL.—**Holotype**: CAS 32633 (37.0 mm SL). Philippines, Luzon I., Zambales, 4 km w of Calguaguin Cove, 64–81 m, 0835–0910 hrs, J. E. Norton, 9 June 1966.

COUNTS.—Dorsal fin III, X, 8 (last double). Anal fin I, 9 (last double). Pectoral fin 13 (left), 14 (right). Pelvic fin I, 3. Lateral line scales 10 (left), 11 (right). Vertebrae 27.

DESCRIPTION.—(See also generic description above.) Body somewhat elevated behind head, body depth  $\frac{1}{3}$  of standard length. Body densely covered with modified scales which form spinous points, best developed anteriorly; lateral line with 10–11 tubes, each with 2 small, laterally projecting spinules which are best developed anteriorly; last scale extending over base of caudal fin. Gill rakers short, difficult to count, total 10, 3 on upper arch, 7 on lower arch. Few modified scales on snout, none on interorbit. Movable lachrymal bone (infraorbital one)

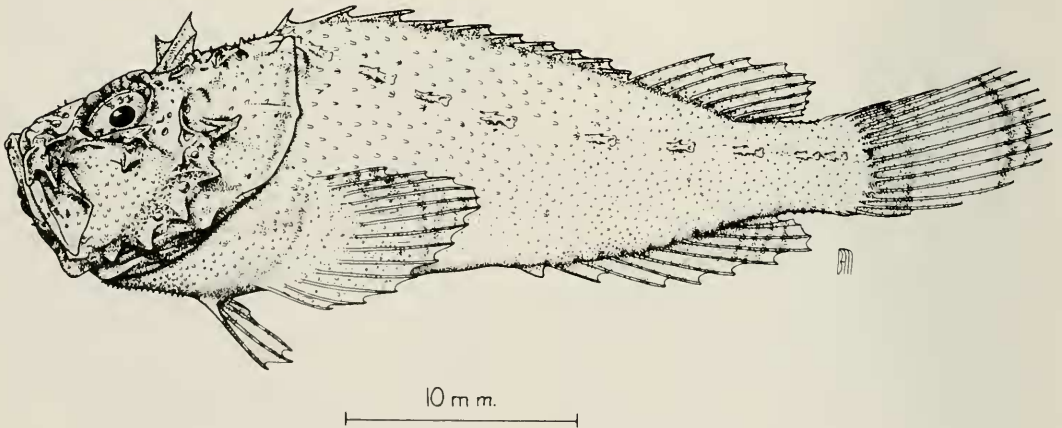


FIGURE 3. Lateral view of holotype of *Xenaploactis anopta* (CAS 32633, 37.0 mm SL).

bladelike with 3 spines: 1st small, directed toward premaxilla; followed by 2 large, sharp spines, 2nd about equal in length to 3rd, directed downward; 3rd spine directed down and slightly back. Spine on second infraorbital bone absent; a large elongate lateral line pore present. Mouth strongly upturned. Interorbit with prominent ridges, divergent anteriorly, convergent over middle of interorbit, strongly divergent posteriorly (Fig. 4 upper). Postocular spine and pterotic spine ridgelike. Posttemporal spine a large well-ossified lump ending in blunt spine, followed by blunt supraclithral spine. Dorsal posterior border of cleithrum ending in a small, poorly defined blunt spine. Preopercular lateral line pores opening as small tubes, fingerlike cirri above uppermost pores. In ventral view, surface of dentary with 5 small fingerlike cirri along outer margin; 5 pairs of similar cirri anteriorly, between dentaries.

Color in life unknown. Color of head and body in preservative (Fig. 3) brown, with scattered black specks. Fins darker, possibly speckled in life; caudal with vertical bands.

Measurements in millimeters as follows (percent standard length in parentheses): standard length 37.0; head 13.0 (35); snout 3.7 (10); orbit 3.3 (9); interorbital width 2.5 (6); jaw 5.3 (14); postorbital 7.3 (20); body depth 12.3 (33); predorsal 6.4 (17); anal fin 14.1 (38); caudal fin 9.2 (25); pectoral fin 8.5 (23); pelvic fin 5.2 (14); 1st dorsal spine 1.9 (5); 2nd dorsal spine 3.5 (9); 3rd dorsal spine 2.4 (6); 4th dorsal spine 1.5 (4); 5th dorsal spine 2.2 (6); penultimate dorsal spine 2.2 (6); last dorsal spine 2.3 (6); anal spine 1.9 (5); least depth of caudal peduncle 4.1 (11); snout to 2nd dorsal spine 6.8 (18); snout to 3rd dorsal spine 8.4 (23); snout to 4th dorsal spine 12.9 (35); snout to 5th dorsal spine 13.7 (37); width of 1st dorsal spine at midlength 0.3 (1); incision of dorsal fin membrane at 4th dorsal spine (from tip to membrane) 1.5 (4).

ETYMOLOGY.—The species-group name is derived from the Greek *anoptos* (unseen).

DISTRIBUTION.—Known only from the type-locality in the Philippines at 64–81 m.

#### *Xenaploactis cautes*, new species

(Figures 4 lower and 5)

No literature applies to this species.

MATERIAL.—**Holotype**: CAS 16105 (28.0 mm SL). Gulf of Thailand, 12°19'15"N, 100°43'40"E, 28.6 km from Goh Chuang, 33 m, muddy sand bottom, MV STRANGER, 16-ft (4.9-

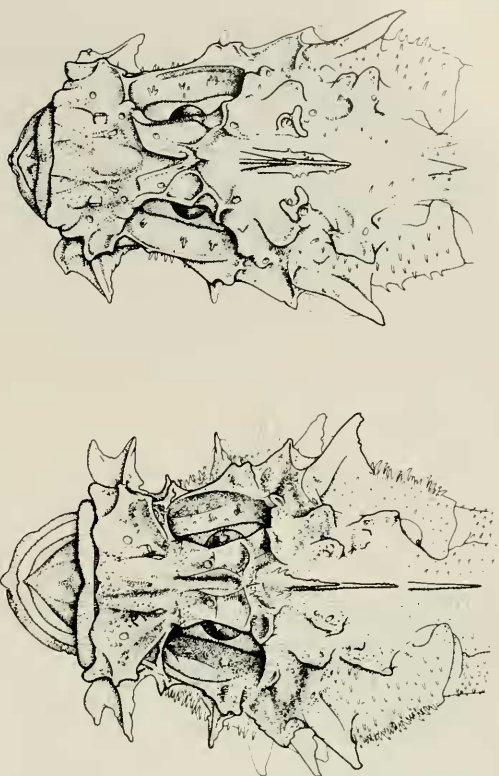


FIGURE 4. Dorsal view of head of holotypes of *Xenaploactis anopta* (upper) and *X. cautes* (lower).

m) otter trawl, George Vanderbilt Foundation sta. 60-449, GVF reg. no. 2724, Scripps locality 60-185 C.N. 633f.5-9a, 0117-0202 hrs, 13 Dec. 1960. **Paratype**: USNM 221143 (24.3). Andaman Sea, 14°07'N, 97°05'E, 69–73 m, International Indian Ocean Expedition, ANTON BRUUN cruise 1, sta. 38, Gulf of Mexico shrimp trawl, 30 Mar. 1963.

COUNTS.—Dorsal fin III, XI, 8–9 (last double). Anal fin I, 10 (last double). Pectoral fin 14. Pelvic fin 1, 3. Lateral line scales 9–10. Vertebrae 27–28.

DESCRIPTION.—(See also generic description above.) Body not notably elevated behind head, body depth less than  $\frac{1}{3}$  of standard length. Body covered with modified pointed scales. Lateral line with 9–10 tubed scales, each with 2 small laterally projecting spinules which are best developed anteriorly, last scale extending over base of caudal fin. Gill rakers short, difficult to count, total 10–12, 3–4 on upper arch, 6–8 on lower arch.

Many modified scales on snout. Lachrymal bone (infraorbital 1) with 3 spines; 1st, of moderate size, points mostly forward, continuous

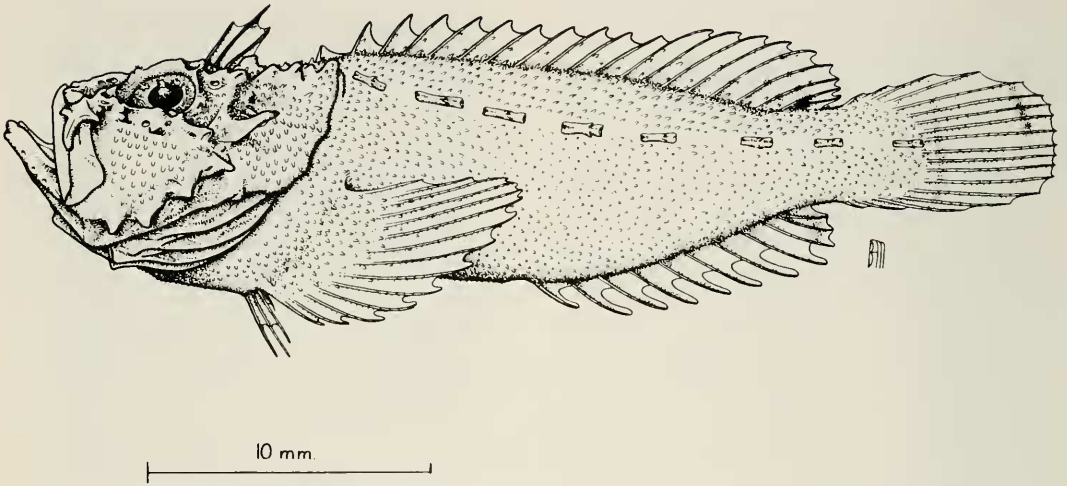


FIGURE 5. Lateral view of holotype of *Xenaploactis cautes* (CAS 16105, 28.0 mm SL).

with ridge at base of larger 2nd spine; 2nd spine about equal in length to 3rd, directed downward, slightly curved; 3rd spine points mostly back. Second infraorbital bone with 2 spinous points, 1 above other, with obscure circular lateral line pore. Interorbit with nearly parallel ridges, stronger posteriorly (Fig. 4 lower). Postocular spines as slightly curved ridges, meeting at midline of interorbit, connected to interorbital ridges. Pterotic spine ridgelike. Posttemporal spine ridgelike, followed by blunt supracleithral spine. Cleithrum ending in small blunt spine. In ventral view, surface of dentary with 5 tiny fingerlike cirri along outer margin, 5 pairs of similar cirri anteriorly between dentaries.

Color in life unknown. Color in preservative pale, probably strongly faded. Head and body without scattered specks. Fins not darker than body.

Measurements in millimeters as follows (holotype first, percent standard length in parentheses): standard length 28.0, 24.3; head 9.9, 9.4 (35, 39); snout 2.4, 2.4 (9, 10); orbit 2.4, 2.4 (9, 10); interorbital width 1.8, 2.1 (6, 9); jaw 3.6, 4.2 (13, 17); postorbit 4.7, 4.9 (17, 20); body depth 7.8, 7.4 (28, 30); predorsal 5.0, 4.2 (18, 17); anal fin 11.1, 10.8 (40, 44); caudal fin 6.7, 6.2 (24, 26); pectoral fin 6.2, 5.5 (22, 23); pelvic fin 3.0, 3.4 (11, 14); 1st dorsal spine 1.7, 1.7 (6, 7); 2nd dorsal spine 2.9, 2.6 (10, 11); 3rd dorsal spine 1.7, 1.6 (6, 6); 4th dorsal spine 1.3, 1.3 (4, 5); 5th dorsal spine 1.7, 1.5 (6, 6); penultimate dorsal spine 2.2, 1.6 (8, 6); last dorsal spine 2.3, 1.4 (8,

6); anal spine 1.8, 2.0 (6, 8); width between interorbital ridges 0.7, 0.8 (3, 3); least depth of caudal peduncle 3.3, 2.7 (12, 11); snout to 2nd dorsal spine 5.6, 5.2 (20, 21); snout to 3rd dorsal spine 6.0, 5.4 (21, 22); snout to 4th dorsal spine 8.9, 8.4 (32, 34); snout to 5th dorsal spine 10.3, 8.5 (37, 35); width of 1st dorsal spine at mid-length 0.2, 0.2 (1, 1); incision of fin membrane at 4th dorsal spine (from tip to membrane) 1.3, 1.3 (4, 5).

**ETYMOLOGY.**—The species-group name is derived from the Latin *cautes* (a rough, pointed rock) and is to be treated as a noun in apposition.

**DISTRIBUTION.**—Known only from the type material from the Andaman Sea and Gulf of Thailand. This species appears to inhabit muddy sand bottom at depths of 33–79 m.

#### ACKNOWLEDGMENTS

We thank a number of friends and colleagues who assisted us in the course of this study: Alwyne Wheeler and Mary Connolly (BMNH) for giving us the opportunity to examine the holotype of *Prosopodasys asperimus*; Leslie Knapp, of the Smithsonian Oceanographic Sorting Center, for sending us the second specimen of *Xenaploactis cautes*; James Gordon, Betty Powell, William Ruark, and Pearl Sonoda (all of CAS) for their continuous help. Tomio Iwamoto and Lillian Dempster (CAS) reviewed the manuscript and offered critical suggestions. We also wish to thank Ellie Koon and Joanne Zupan, of

the University of Michigan, for their assistance. The drawings were made by Beth Meinhard (CAS).

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